

FIG. 1

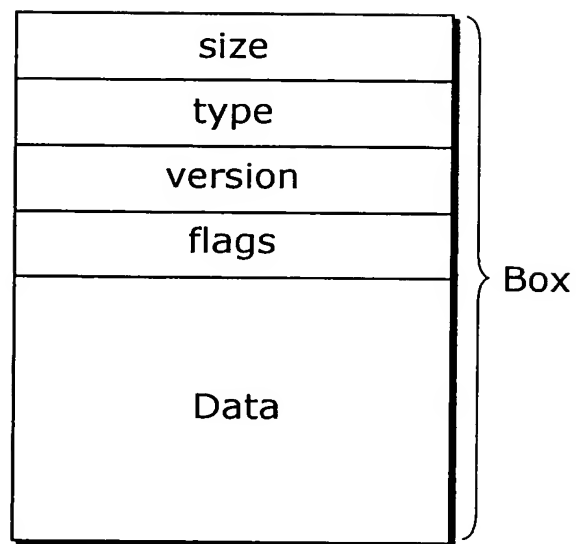


FIG. 2

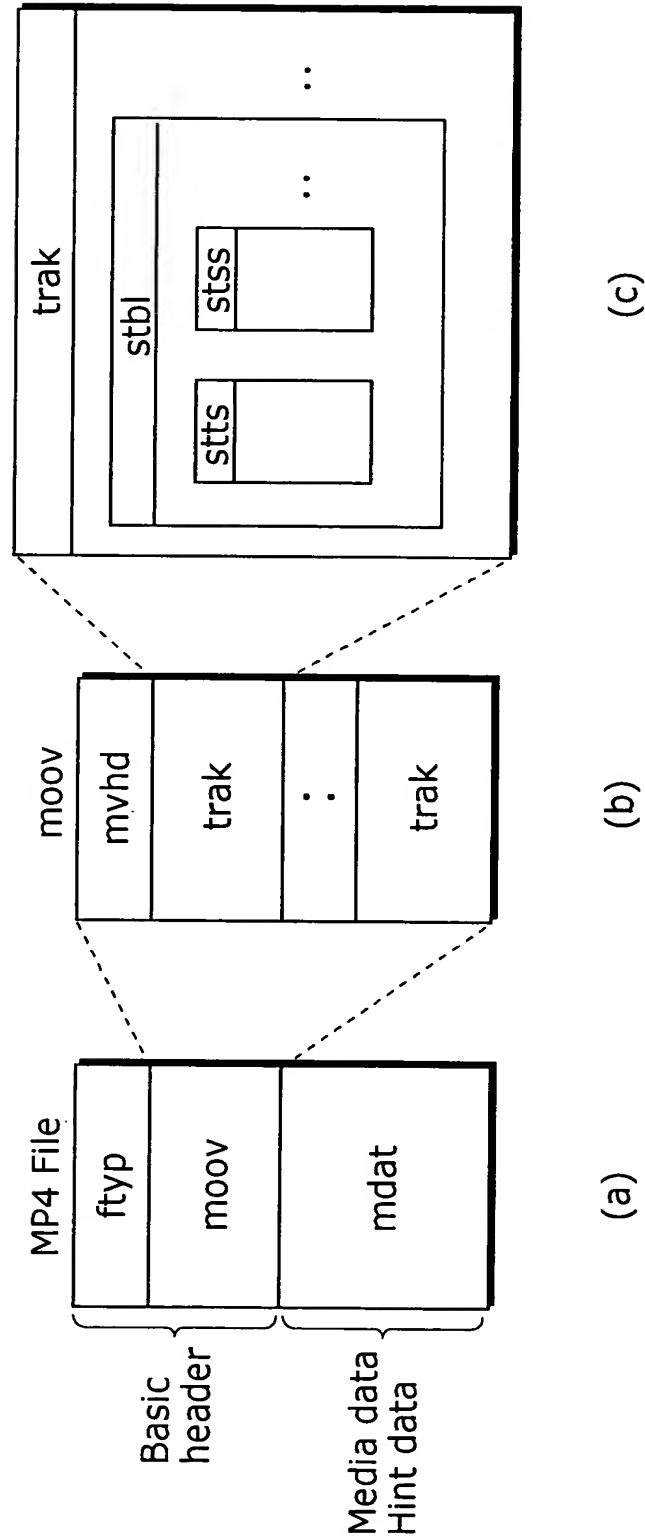


FIG. 3

MP4 File

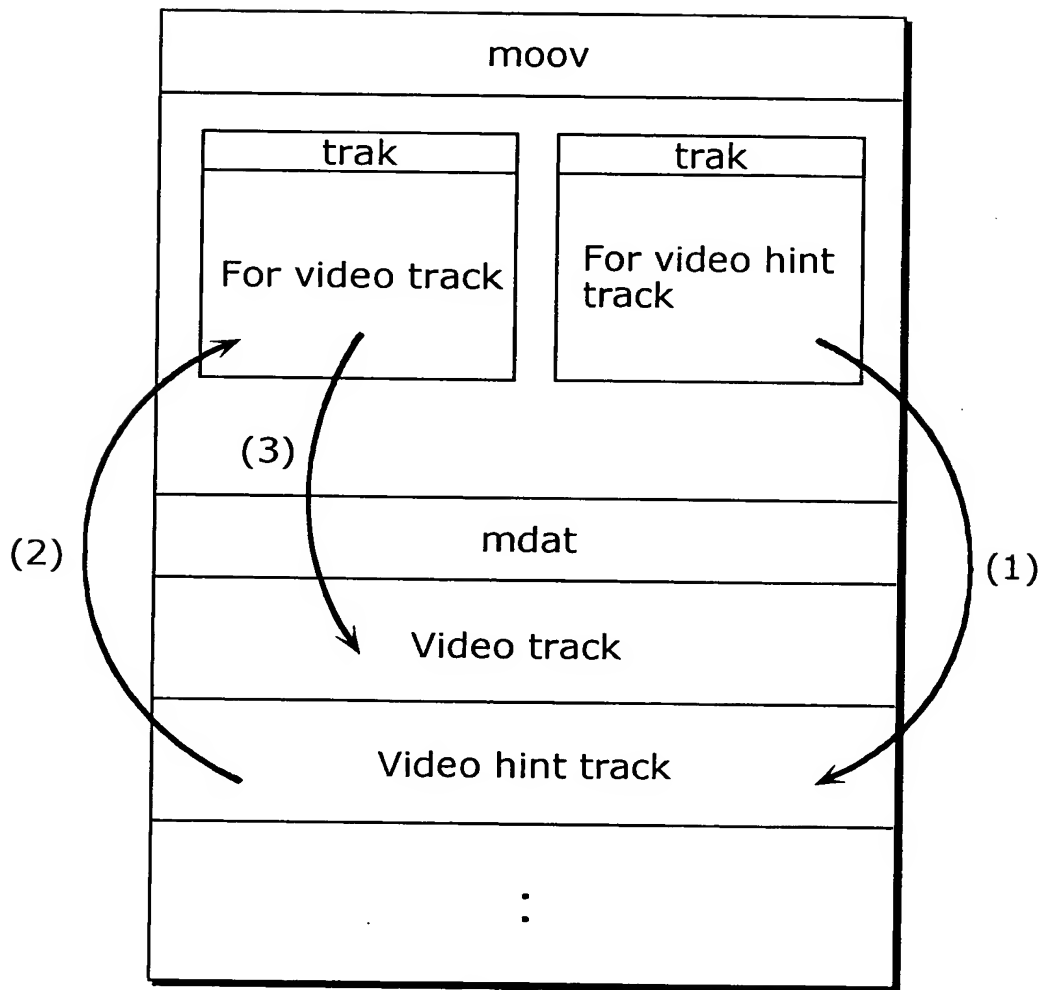


FIG. 4

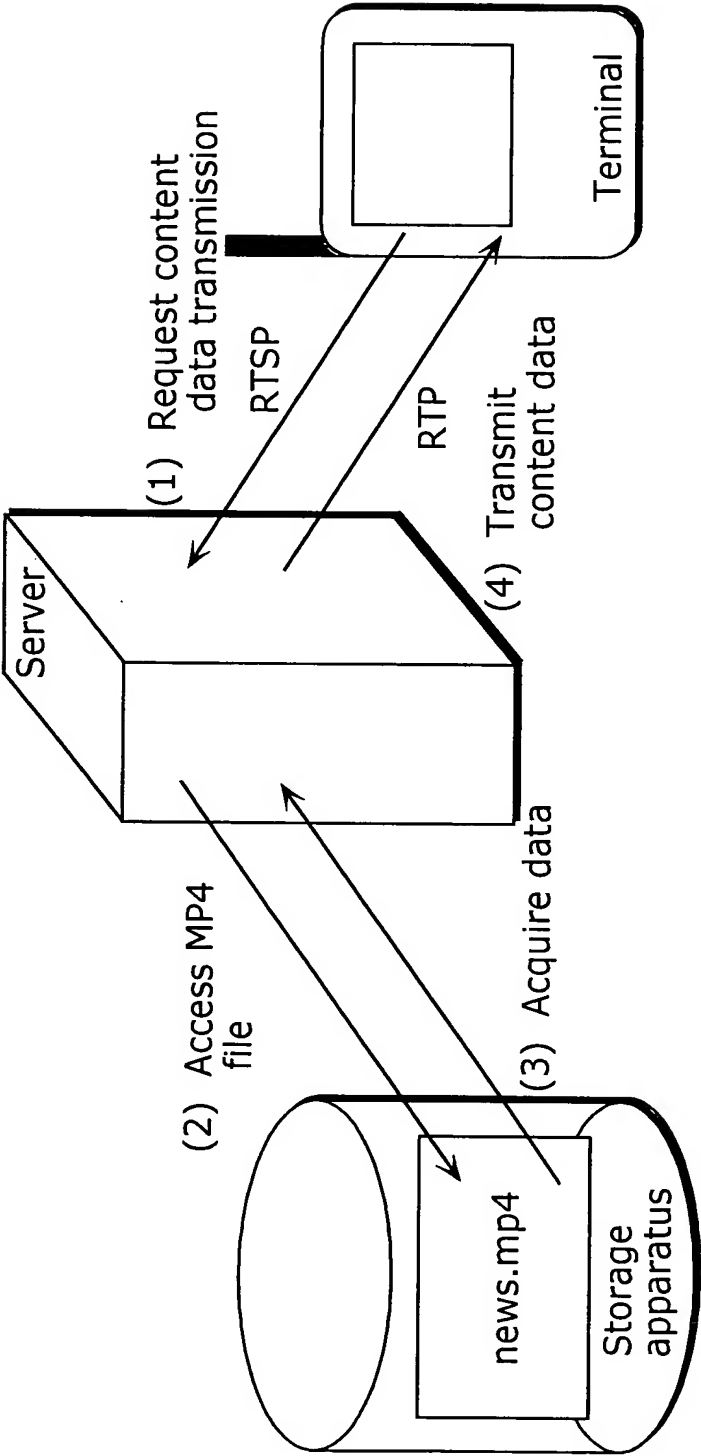


FIG. 5

(1)C->S	DESCRIBE rtsp://localhost/news.mp4 RTSP/1.0 Accept: application/sdp	
(2)S->C	RTSP/1.0 200 OK Content-Type: application/sdp Content-Length: 568  v=0 o=-1 I IN IP4 100.100.100.00 c=IN IP4 0.0.0.0 b=AS:64 a=control:rtsp://localhost/news.mp4 a=range:npt=0-60.000000 t=0 0 m=video 0 RTP/AVP 98 b=AS:64 a=rtptime:98 MP4V-ES/90000 a=control:rtsp://localhost/news.mp4/trackID=3 a=fmtp:98 profile-level-id=8: config=000001b008000001b509000001000000012000884007a82c2090a21f a=range:npt=0-60.000000	SDP
(3)C->S	SETUP rtsp://localhost/news.mp4/trackID=3 RTSP/1.0 Transport: RTP/AVP:unicast:client_port=16284-16285:ssrc=3643367607	
(4)S->C	RTSP/1.0 200 OK Transport: RTP/AVP:unicast:client_port=16284-16285:ssrc=3643367607:server_port=11020-11021	
(5)C->S	PLAY rtsp://localhost/news.mp4 RTSP/1.0	
(6)S->C	RTSP/1.0 200 OK Range:npt=0.000-60.000 RTP-Info: url=rtsp://localhost/news.mp4/trackID=3:seq=10000	
(7)C->S	PAUSE rtsp://localhost/news.mp4 RTSP/1.0	
(8)S->C	RTSP/1.0 200 OK	
(9)C->S	PLAY rtsp://localhost/news.mp4 RTSP/1.0 Range: npt=30.000-	
(10)S->C	RTSP/1.0 200 OK Range: mpt=30.000-60.000 RTP-Info: url=rtsp://localhost/news.mp4/trackID=3:seq=11441	
(11)C->S	TEARDOWN rtsp://localhost/news.mp4 RTSP/1.0	
(12)S->C	RTSP/1.0 200 OK	

FIG. 6

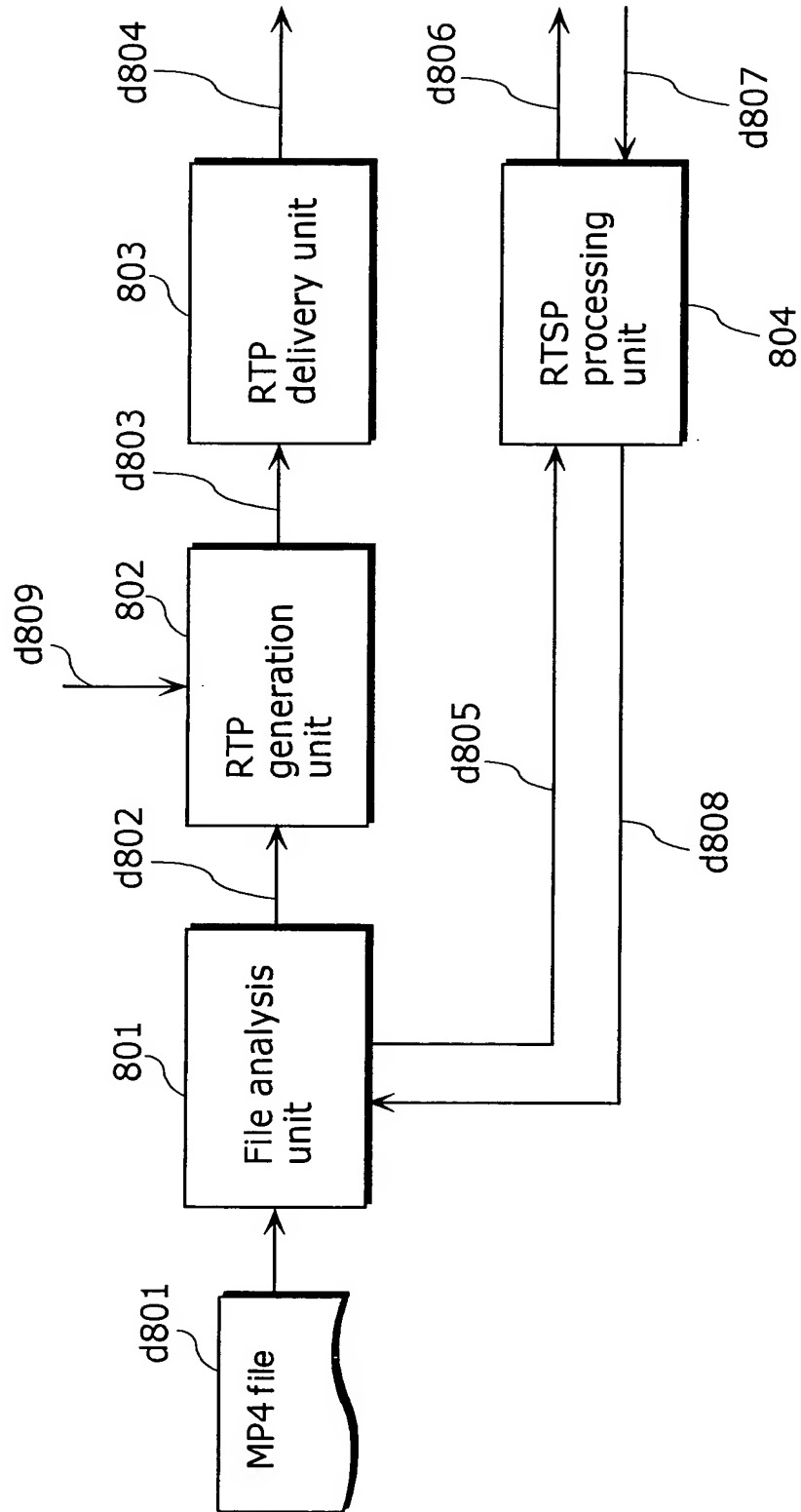


FIG. 7

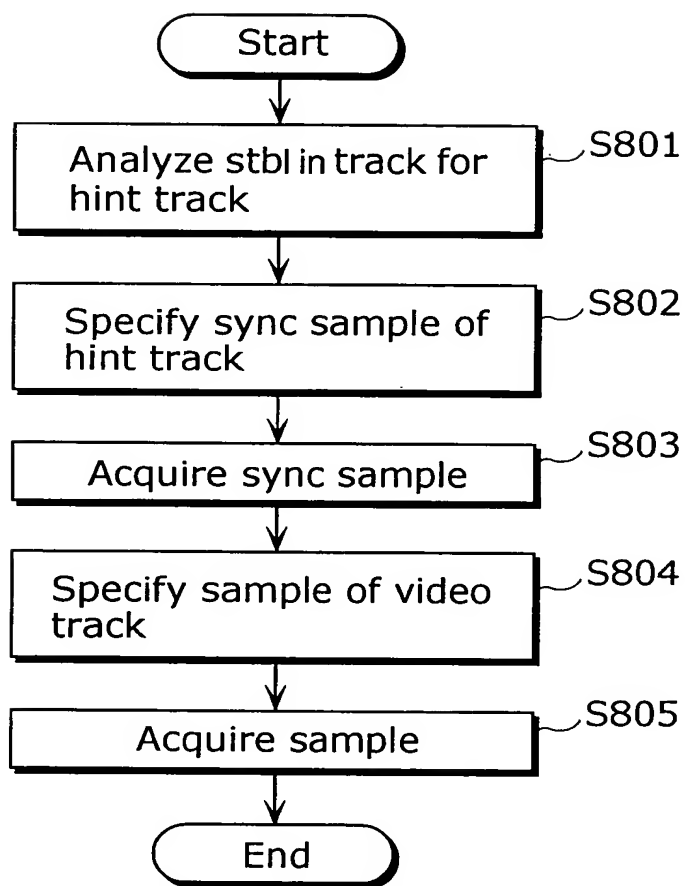
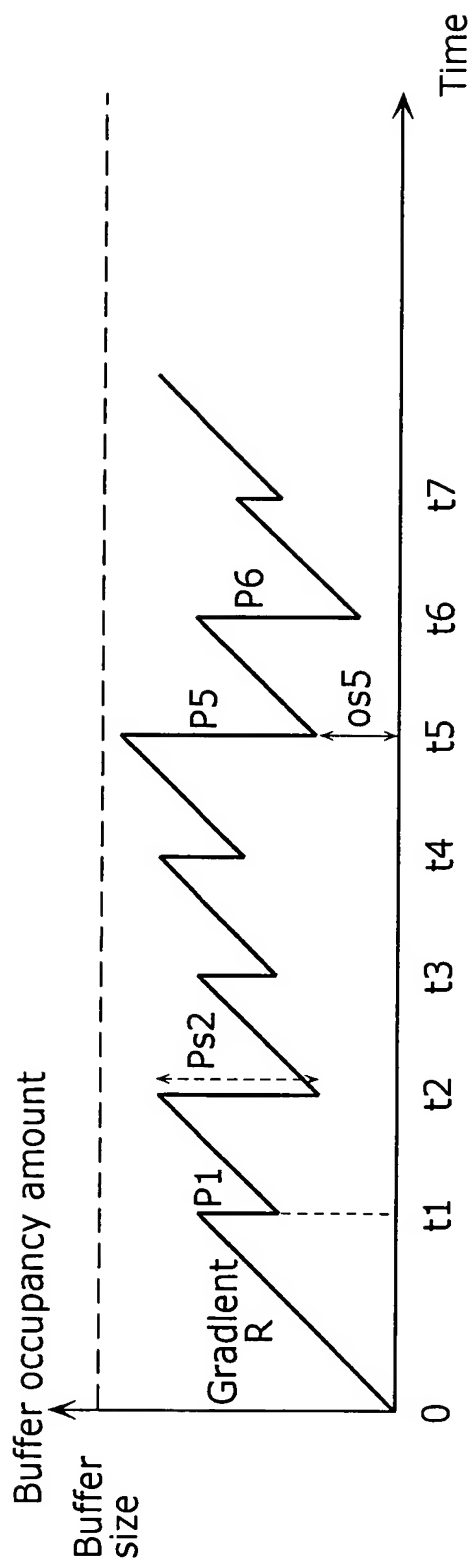


FIG. 8





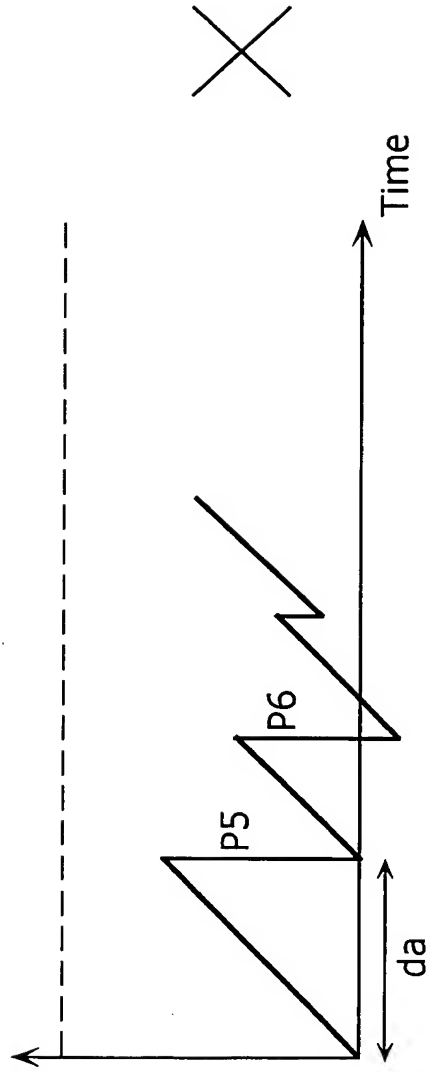
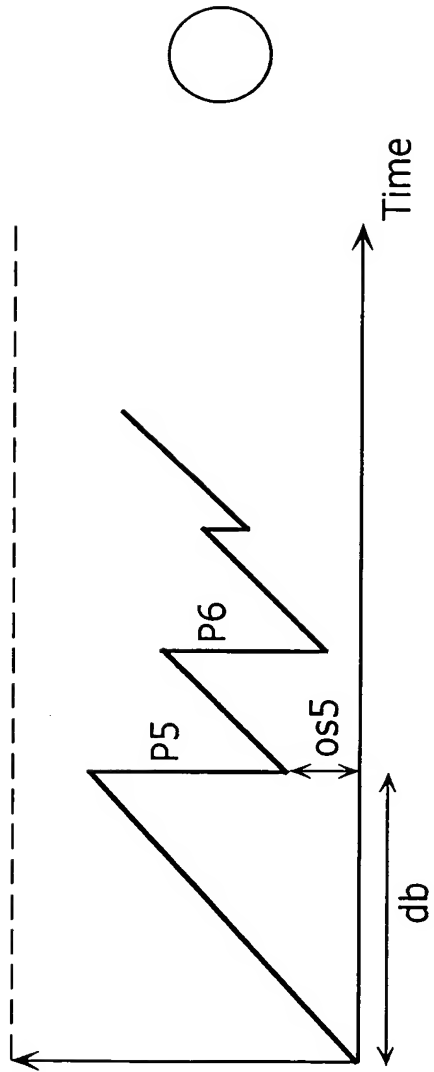


FIG. 10

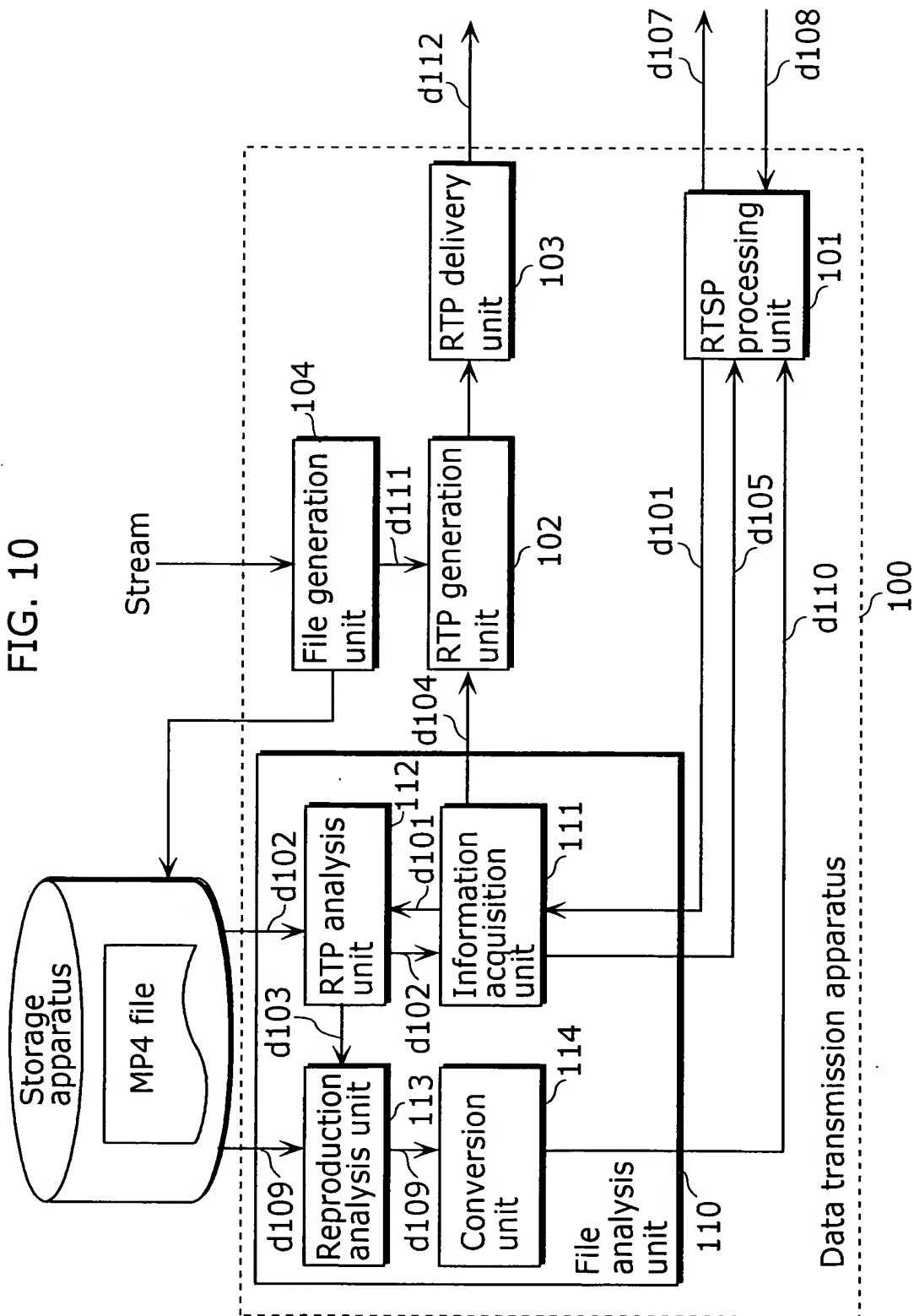
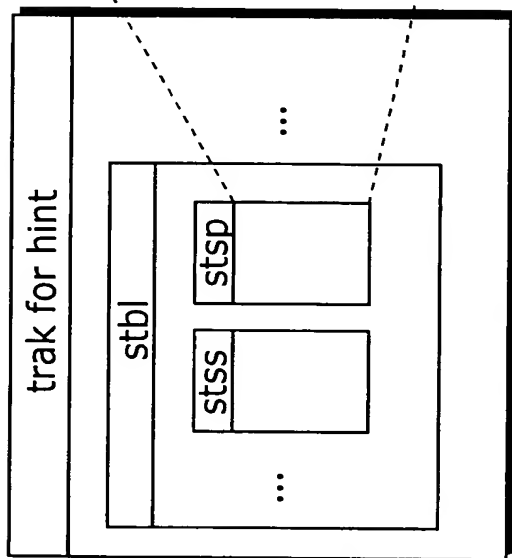


FIG. 11A



D109

Sync sample number	Necessary data amount for pre-buffering(byte)
1	15000
50	8000
100	12000
150	13000
..	..
300	9000
..	..

FIG. 11B

```
aligned (8) class SyncSampleToPrebufBox
{
    extends FullBox ('stsp', version = 0, 0) {
        unsigned int(32) entry_count;
        int i;
        for (i=0; i < entry_count; i++) {
            unsigned int(32) sync_sample_number;
            unsigned int(32) prebuf_data_byte;
        }
    }
}
```

FIG. 12A

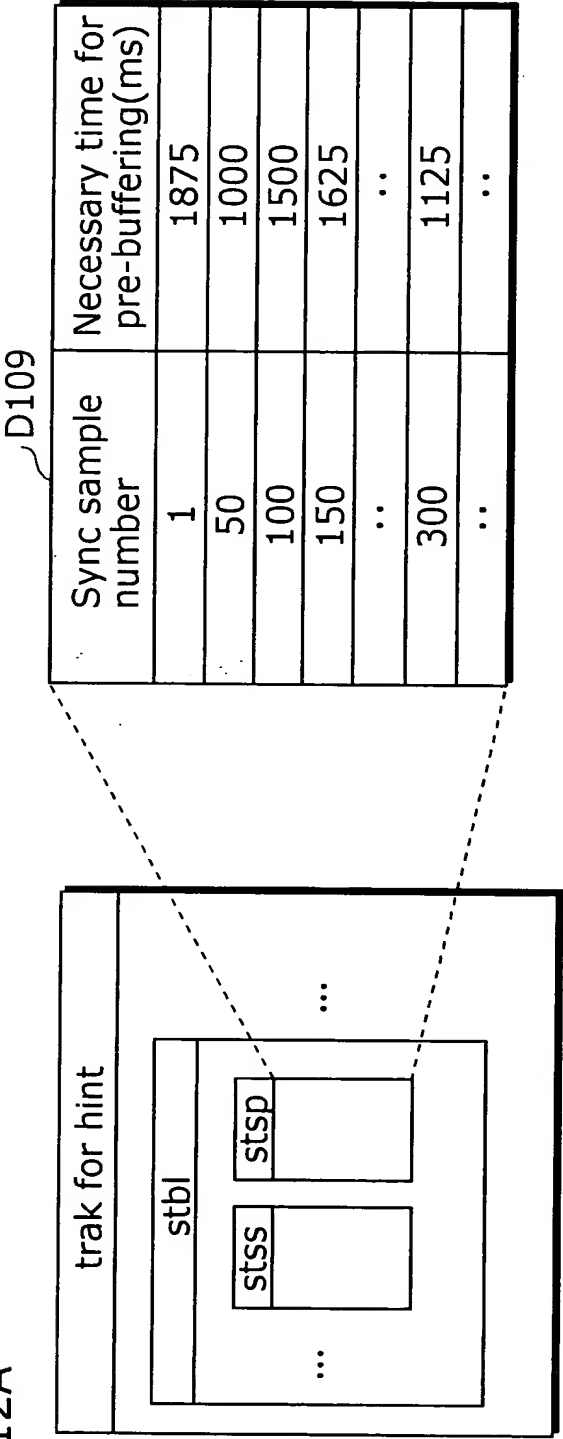


FIG. 12B

```
aligned (8) class SyncSampleToPrebufBox
extends FullBox ('stsp', version = 0, 0) {
    unsigned int(32) entry_count;
    int i;
    for (i=0; i < entry_count; i++) {
        unsigned int(32) sync_sample_number;
        unsigned int(32) prebuf_period;
    }
}
```

FIG. 13

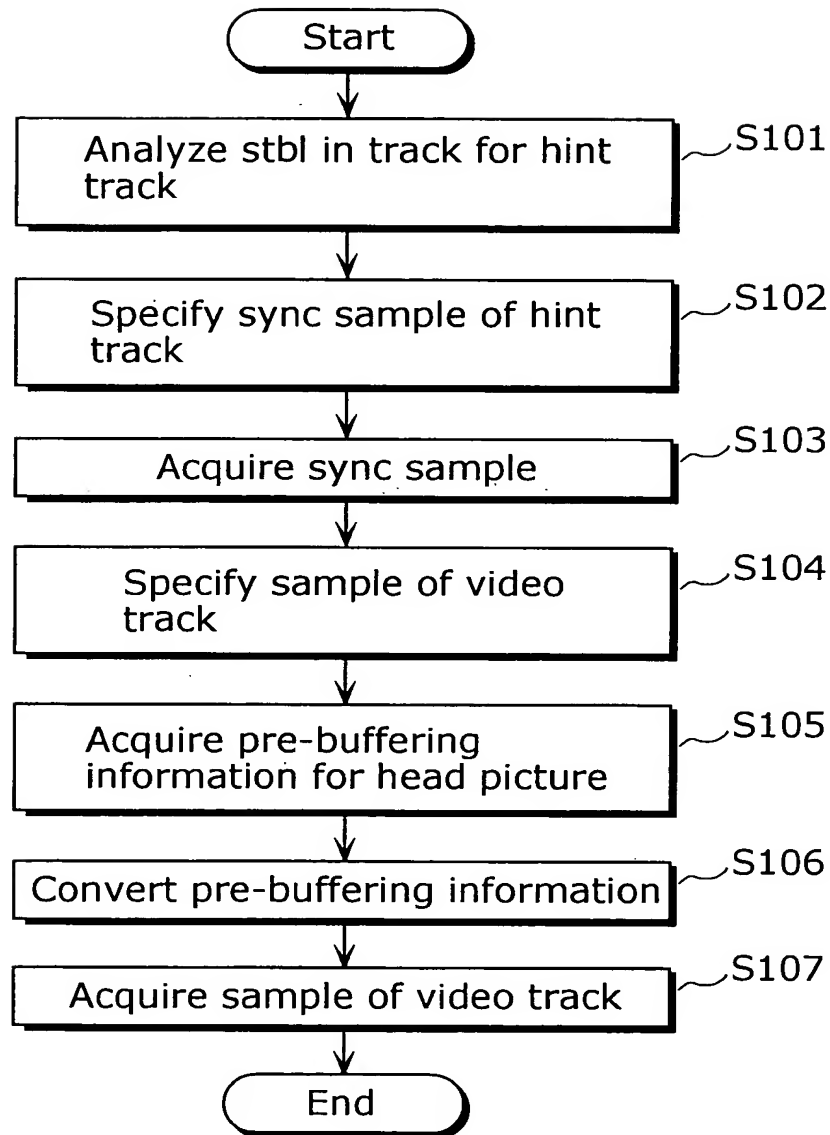


FIG. 14

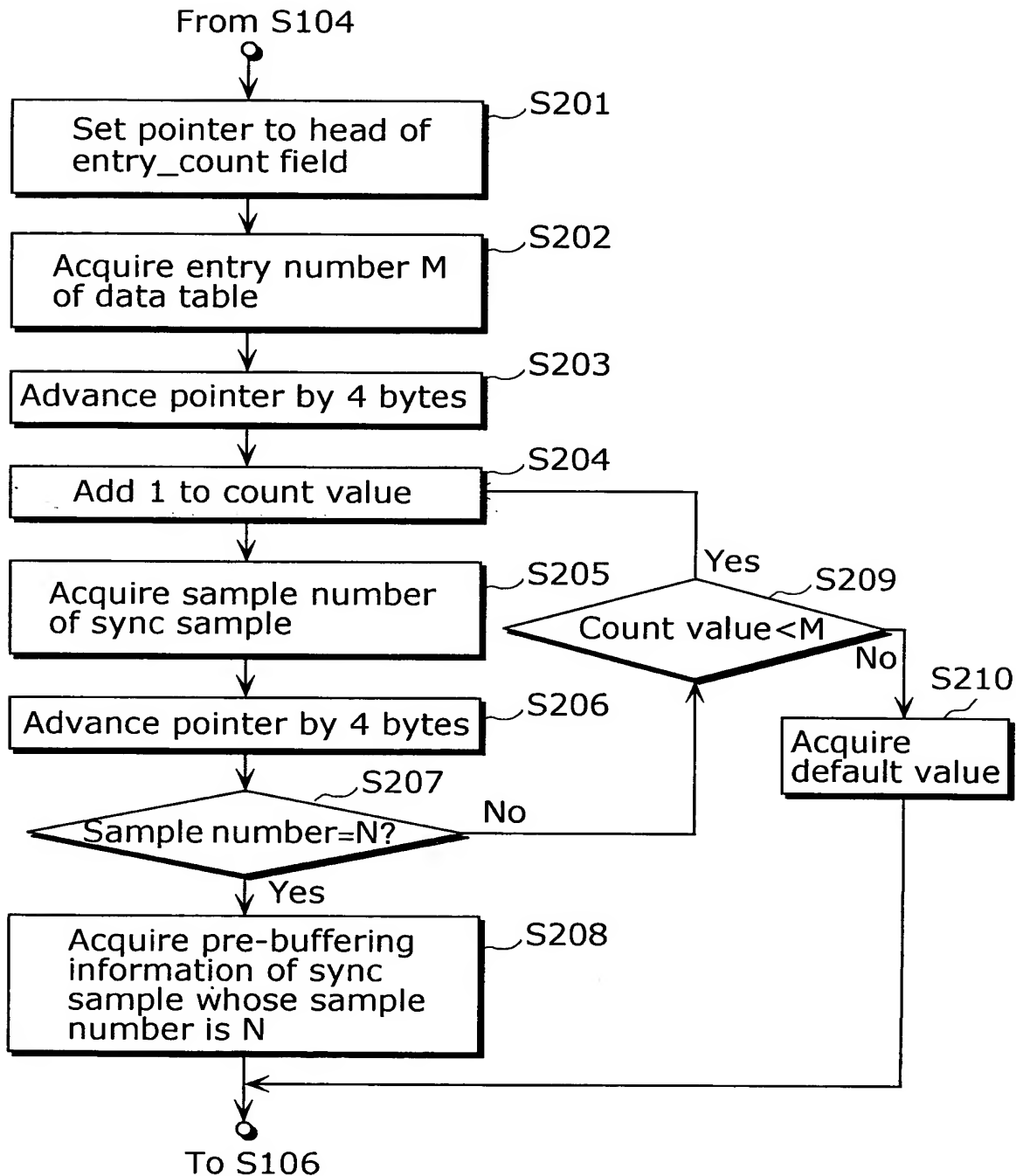


FIG. 15

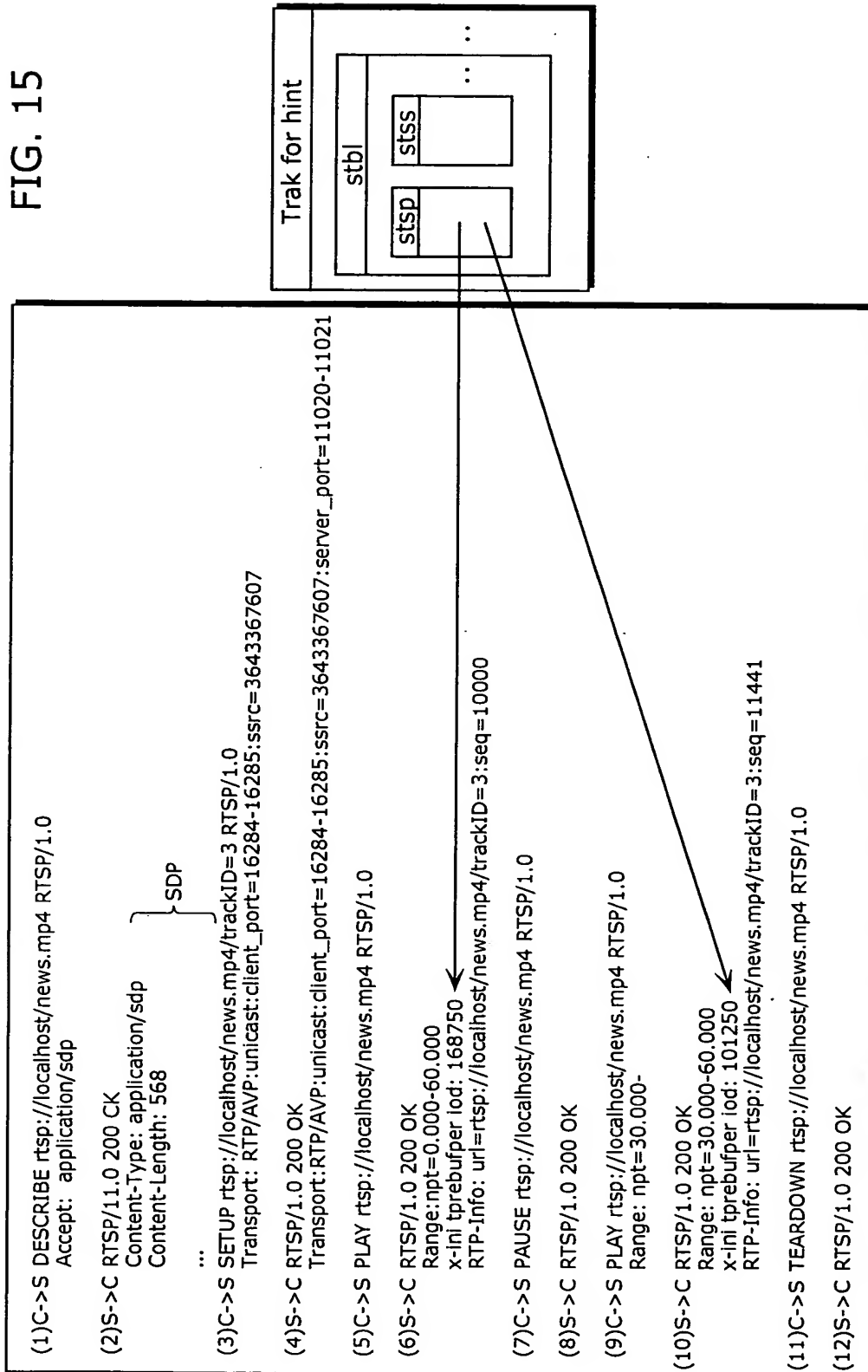


FIG. 16

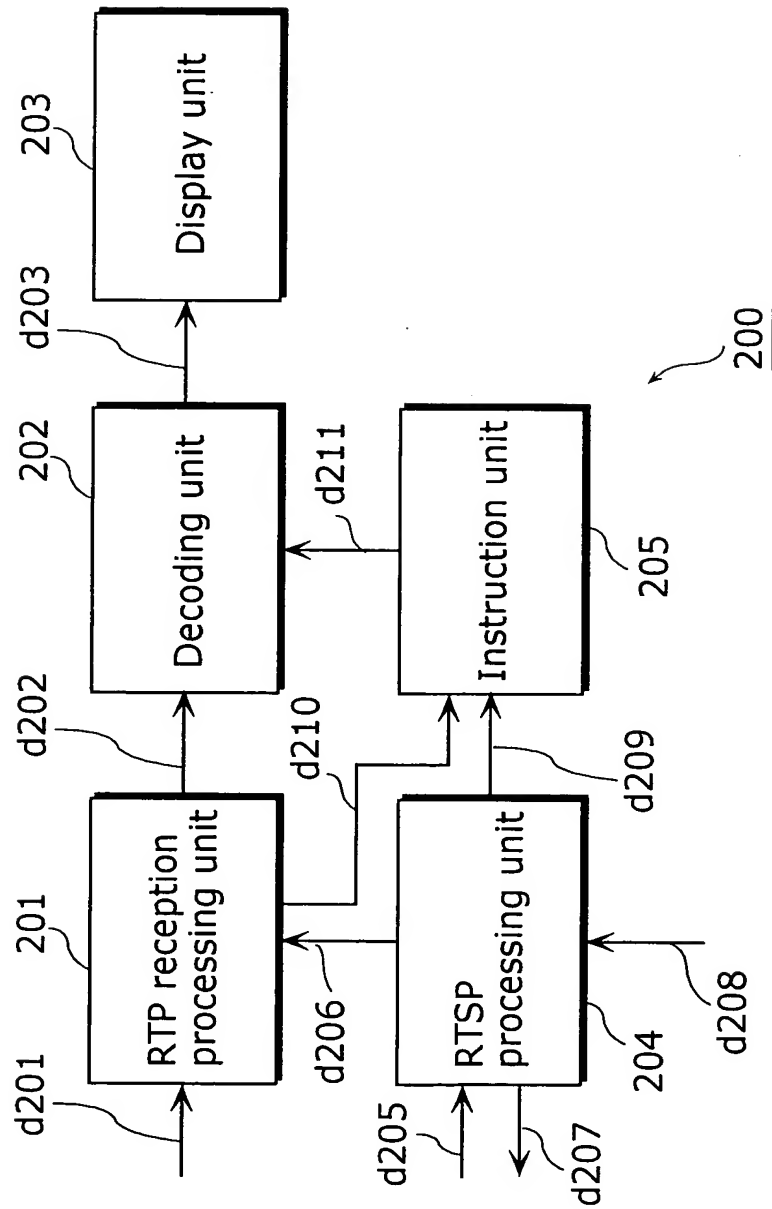




FIG. 17

